CLAIMS

1. A method, of manufacturing an exhaust gas purifying filter capable of capturing particulates in an exhaust gas discharged from an internal combustion engine to thereby purify the exhaust gas, said method comprising the steps of:

setting a molding die wherein a tapered jig, having a plurality of tapered molding surfaces formed in tapered shape so as to be inclined relative to an extrusion direction of a filter-providing molding material, is disposed in opposition to an extrusion port consisting of opened slits in a molding die, said slits being formed in the shape of honeycomb, and said plurality of tapered molding surfaces are positioned so as to be aligned with said slits of said molding die in the extrusion direction of the molding material;

forming tapered plugs wherein the molding material is extruded from said slits of the molding die so as to form a honeycomb-like molded article having a plurality of cells separated by partitions, the front end of the honeycomb-like molded article is introduced into said tapered jig, and then, by deflecting the front end of said partitions along said plurality of tapered molding surfaces of the tapered jig, a plurality of tapered plugs are formed in which said plugs have small openings which are produced upon size reduction of the openings of said cells;

moving said tapered jig wherein said tapered jig is moved in the extrusion direction of the molding material at a speed equal to or higher than the extrusion speed of said molding material;

cutting the molded article wherein, after said molding material is extruded at a predetermined extrusion length, said honeycomb-like molded article is cut at a predetermined length; and

fitting plugs wherein, after cutting, the honeycomb-like molded article is dried and fired and then

plugs are fitted into said small openings at the front end of the molded article and into said openings of the cells at the rear end of the molded article.

2. A manufacturing method according to claim 1, wherein the movement of said tapered jig in the jig movement step is synchronized with the extrusion of said molding material.

3. A manufacturing method according to claim 1 or 2, wherein said tapered jig comprises protrusions, projecting in the direction toward said molding die, at positions opposed the portions used in the formation of said small openings.

4. A manufacturing method according to any one of claims 1 to 3, wherein said tapered jig has through-holes formed therein which penetrate, from the portion opposed to the opening of each cell of said honeycomb-like molded article, to a surface of said tapered jig other than the surface opposed to said molded article.

5. A manufacturing method according to any one of claims 1 to 4, wherein said molding material is a ceramic material.

6. A manufacturing method according to claim 5, wherein said ceramic material comprises at least one member selected from the group consisting of talc, silica, kaolin, alumina and aluminum hydroxide.

7. A manufacturing method according to claim 5 or 6, wherein said ceramic material further comprises a pore-providing material.

8. A manufacturing method according to claim 7, wherein said pore-providing material is carbon, a resin or a mixture thereof.

9. A manufacturing method according to claim 8, wherein said resin is at least one thermoplastic resin selected from the group consisting of acrylic resin, poly(methyl stearate) resin and vinyl chloride resin.

10. A manufacturing method according to any one of claims 5 to 9, wherein said ceramic material further

comprises an organic binder.

11. A manufacturing method according to claim 10, wherein said organic binder is methyl cellulose, hydroxymethyl cellulose or a mixture thereof.

12. A manufacturing method according to any one of claims 1 to 11, wherein said die setting step, said tapered plug formation step, said jig movement step and said cutting step are repeated to produce a plurality of honeycomb-like molded articles having the same structure using one molding die.

13. A manufacturing method according to any one of claims 1 to 12, wherein drying and firing of the honeycomb-like molded article are simultaneously carried out with drying and firing of the plugs fitted into the molded article after completion of said plug fitting step.

14. A manufacturing method according to any one of claims 1 to 13, wherein said honeycomb-like molded article has cells, the cross-section of which is substantially a triangle.

15. A manufacturing method according to any one of claims 1 to 14, wherein said exhaust gas purifying filter is disposed in an exhaust gas conduit from said internal combustion engine in such a manner that the front end, inclusive of said tapered plugs, of said filter is opposed to an upstream side of said exhaust gas conduit.

16. A manufacturing method according to any one of claims 1 to 15, wherein the internal combustion engine is a diesel engine.